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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/327.621 06/08/99 HORIKAWA H 101809.03

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MMC1/0126

EXAMINER

KIM.P

ART UNIT

PAPER NUMBER

2851

DATE MAILED:

01/26/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary

Application No.

09/327,621

Applicant(s)

Ohtomo et al.

Examiner

PETER KIM

Group Art Unit

2851



☒ Responsive to communication(s) filed on Dec 12, 2000

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 26-94 and 97-104 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 26-94 and 97-104 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☒ received in Application No. (Series Code/Serial Number) 08/935,445

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

1. Applicant's arguments filed on 12/12/00 (paper #12) have been fully considered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 26-94 and 97-104 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishi in view of Negishi.

Nishi discloses in Figures 1 and 2 and column 8, line 14 through column 10, line 4, a projection exposure apparatus with a base (ref. 19) which holds the scanning stage (ref. 20) and the fine adjustment stage (ref. 21) which holds the mask (ref. 7) and movable mirror (ref. 33, 34A, 34B) for laser interferometers (ref. 35, 36A, 36B) which detect a displacement of the fine adjustment stage. Nishi also discloses the illumination system (ref. 22), projection optical system (ref. 13), substrate (ref. 14) and substrate stage with movable mirror and laser interferometer. Although Nishi does not disclose the substrate located on the fine adjustment stage and the scanning stage, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the substrate stage with such an arrangement. Nishi discloses a means for

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moving the stage but Nishi does not disclose electromagnetic actuators. Negishi discloses in Figures 1-4 and column 3, line 20 through column 7, line 35, electromagnetic actuators for moving the scanning stages of an exposure apparatus in x- and y-directions. Negishi discloses the stationary member having a coil of the electromagnetic actuator located on the stationary base relative to the moving stage and the movable magnetic portion located on the moving stage. Negishi also discloses cooling unit that cools the stationary member of the electromagnetic actuator. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the base for holding the scanning and fine adjustment stages and the electromagnetic actuators and the cooling unit in view of Negishi to the invention of Nishi in order to more efficiently produce semiconductor elements or liquid crystal display element which is well known product of scanning exposure apparatus.

Remarks

4. Due to the filing of terminal disclaimer, double patenting rejection is withdrawn.

Applicant argues that Nishi in view of Negishi does not disclose the cooling unit for the fine adjustment stage. Nishi and Negishi discloses the cooling units for cooling the actuators of the scanning stage and it would have been obvious to one of ordinary skill in the art to provide the cooling unit for both the scanning and fine adjustment stages since both stages have actuators that needs to be cooled.

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Applicant argues that Nishi does not disclose stages with different thrusts. Nishi does disclose a first stage (reticle stage in Nishi) and a second stage (wafer stage in Nishi) where the second stage is moved in x-y directions and different actuators for moving the second stages in the x and y-directions where different thrusts are used for movement in the different directions.

Applicant also argues that Nishi does not disclose moving the fine stage while the scanning stages is accelerated or decelerated. Nishi discloses in column 12, "the main control system 23 decelerates the reticle side scanning stage 20 and resets the reticle side fine adjustment stage 21 to the initial position."

Conclusion

5. All claims are rejected.
6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Kim whose telephone number is (703) 305-0105. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays during the same hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams, can be reached on (703) 308-2847. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

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01/22/01

Russell Adams
Russell Adams
Primary Examiner